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Subject: Osage Operator's Environmental Reference Manual Update, 2nd Draft

Mr. Eddie Streater
Deputy Regional Director
Eastern Oklahoma Regional Office
Bureau of Indian Affairs
P.O. Box 8002
Muskogee, OK 74002-8002 [also sent to: osageregneg@bia.gov]

Dear Mr. Streater;

Hydration Engineering, PLLC is a Bartlesville, Oklahoma firm which provides engineering services including preparation and certification of SPCC Plans. We appreciate the opportunity to participate in the BIA-EPA effort to update the 1997 Osage Operators Environmental Manual and Handbook. Our comments here pertain only to the parts of the 2nd Draft of the Manual where we feel we have some relevant experience. Our comments are limited to the Introduction, Important Contact Information, The Clean Water Act, SPCC, and the Clean Air Act.

Our comments follow the sequence of the 2nd Draft of the Manual as posted on the BIA website, http://bia.gov/cs/groups/xregeasternok/documents/text/idc1-026473.pdf (accessed 4/25/14).

Our comments are organized by page number of the Draft Manual and subject. For the sake of brevity we have limited details otherwise available in the Draft Manual.

Page 4, Preface:

It would be most constructive to state: This Manual is intended to address typical oil and gas operations as found in Osage County Oklahoma. These usually consist of oil and gas wells, flowlines, tank batteries with oil/water separators, produced water disposal tanks, crude oil tanks from which oil is loaded, and transfer lines to disposal wells.

"The objective of the Handbook is to provide useful guidance and best practice standards for daily responsibilities concerning oil and gas operations." Best Practices are not necessarily standards, nor are they responsibilities. There are many examples of Best Practices and all must be viewed in the context in which they have been agreed. We will address the confusion created by the inclusion of "Best Practices" which have not been vetted in the context of oil and gas operations in the Osage as they occur in the Draft.

We believe the Manual should be strictly limited to requirements which have a basis in Federal and State laws and regulations. In that regard, the only difference between Osage County and the balance of the state of Oklahoma is delegation of UIC responsibilities for Class II wells to the state in the other 76 counties and a few BIA rules (25 CFR §226) which provide a basis for enforcement of rules that are redundant to other regulations. This Manual is not the proper forum for attempting to seek a consensus on Best Practices which might be agreed for Osage oil and gas operations.

Page 5, Contact Information:

The reduction in the number of federal contacts is commendable.

However, *"Contact Information"* should include notifications required under Oklahoma law.

The *"Contact Information"* Directs notification of the NRC in the event of a *"Chemical release"* which is not defined. 40 CFR §300.125(c) states, in part, "Notice of an oil discharge or release of a hazardous substance in an amount equal to or greater than the reportable quantity… "The term "hazardous substance" is used rather than "chemical".

To require reporting the hazardous substance must exceed the reportable quantity as defined in 40 CFR §302.3. Inspection of the list of hazardous substances and the corresponding reportable quantities (40 § TABLE 302.4) revels that a produced water spill will only qualify for reporting on the basis of any oil that is present. Therefore, reference to "Chemical release" can, as a practical manner be omitted.

Page 7, Surface Water Quality Protection:

Quoting from the Draft, *"The CWA also makes it unlawful to discharge any pollutant from a point source into the waters of the United States."* This section goes on to say, *"Oil and gas operators should not discharge to any surface water body."* From this an Operator would conclude that any discharge may be determined to be illegal. Point source NPDES authority has been delegated by the EPA to ODEQ.

Is it legal or illegal to open a drain valve on a secondary containment structure and allow accumulated rainwater containing residual salts from produced water (resulting in a TDS less than 1000 ppm) to enter a creek? ODEQ should be consulted in answering this question.

Page 10, SPCC:

A definition of *"Production facility"* is provided but it does not appear again until Appendix E (sic). Again, it would be constructive to state this manual is about *"Production Facilities"* rather than offer a definition that is not otherwise used.

"Who is covered by the SPCC Rule?" 99.9%, if not all, Production Facilities in the Osage are covered by the SPCC Rule.

"What if I have underground storage tanks?" There are no underground "Production facility" storage tanks over 42,000 gallons in the Osage. Such a question and answer undermine the creditability of the Manual in the eyes of the intended audience.

"When does my existing facility need to have an SPCC Plan?" Because all the dates have come and gone, simply state that all facilities must have a Plan. A new facility has six months after beginning operation to have a Plan in place. If your plan was not updated following the cycle of 2008/2009 Amendments then it is probably not fully compliant with the Rule and should be revised or rewritten.

Page 11, SPCC:

"May I have a drain pipe to drain uncontaminated rainwater from my containment area?" The 1997 Handbook also contains the reference to *"general prohibition of drain pipes"*. We cannot find documentation of the source of this "prohibition". Please furnish the regulation and legal authority for this "prohibition". (Although included in the 1997 Handbook we have not found such a reference in the 1997 Manual.)

The reference to the drain/not to drain criteria of 1,000 ppm TDS is very constructive and welcome. It would be further enhanced by pointing out that 1,000 ppm TDS can be determined with acceptable accuracy with a $100 conductivity meter. A conductivity meter measures mS/cm and the conversion should be agreed by EPA and ODEQ.

"Am I required to keep records of planed releases?" The reference to *"from the tank"* should read "from the containment area". Your advice, when fluid is drained, should be limited to the requirements of 40 CFR §112.9(b) unless such records are required by NPDES.

Page 12, SPCC:

"Are there requirements for pumps and flowlines associated with the tank battery?" Item *b. the frequency and type of testing …"*: There are no requirements for testing. A maintenance program can be based on visual inspections. Because our flowlines do not have secondary containment a Part 109 contingency plan is required. However, this Draft fails to provide any guidance as to the content of a "contingency plan". The reference to the "appendix" is not accurate. The sample spill plan included as "Clearwater Oil Company, Ltd." contains its "Appendix I: Oil Spill Contingency Plan" which other than the statement, "Refer to the sample Contingency Plan also available from EPA for more information on the content and format of that Plan" is blank.

This failure to provide a usable basis for a part 109 contingency plan is a major shortcoming of this Draft and the SPCC regulations.

"Who must develop my SPCC plan?" There are exceptions to required PE certification. Appendix A is mislabeled as Appendix E.

"How often must my plan be reviewed?" PE recertification is not required for some reviews.

Page 13, SPCC:

"When will I be required to submit my SPCC plan?" The SPCC rules make no reference to submitting a SPCC Plan to anyone other than the EPA. While we recommend that our clients share their plans with others having a need to know, we do not know the basis for the requirement to submit a SPCC Plan to the BIA. Additionally, the SPCC responsibilities cannot be delegated to the State or Indian tribes.

The Draft fails to state that the operator must: "Have the Plan available to the Regional Administrator for on-site review during normal working hours."

Page 14, SPCC:

"Who should I contact for information about SPCC requirements?" The link is to a page that does not exist. Pursuit of redirection can lead to http://www.epa.gov/emergencies/content/spcc/index.htm . Perhaps, this was what was intended?

"BIA Regulations (25 CFR Part 226)": Appendix B is not labeled in the Draft.

Page 39, Air Pollution Prevention:

"States, tribes, and local governments may also have delegated responsibilities under the Act's requirements." The Manual should acknowledge that virtually all the authority under the Clean Air Act has been delegated to the state of Oklahoma (Oklahoma Department of Environmental Quality). With regard to the Clean Air Act and most provisions of the Clean Water Act, EPA did not retain responsibility for Osage County. (EPA retained non-point source NPDES responsibilities for oil and gas production for Oklahoma and Texas.) At the current time air quality responsibilities in Osage County are the responsibility of ODEQ. If the Manual is to address air emission controls the advice of ODEQ is necessary

Page 40, Air Pollution Prevention:

"Do I need a (air quality) *permit to operate a gas and oil production well in Osage County?"* The question is not answered, see OAC 252:100-7-60.5. ODEQ must provide this answer.

Page 40, Air Pollution Prevention:

Notwithstanding our objections to including "best practices" we have comments on the following questions.

"What general best management practices should I use to reduce or prevent air pollution?" Our concern is what is met or implied by the word "should". "Could" would be more accurate in this context.

It is not accurate to imply that "Replacement and repair of equipment on schedules which prevent failures and maintain performance" is a "best practice". Preventing failures is not necessarily a best practice, the consequences of failures (safety, environmental, cost) and the probability of failure must be considered.

"What best management practices should I use to prevent or reduce fugitive air emissions?" Rather than define what fugitive emissions are not, define what they are, such as: "those emissions (to the air) which could not reasonably pass through a stack, chimney, vent or other functionally-equivalent opening" (borrowed EPA language).

The list of what are referred to as "best management practices" are not necessarily best practices in the context of Osage oil and gas. Comments below are provided to illustrate our concerns.

1. LDAR (Leak Detection And Repair) programs are useful for higher operating pressures and higher vapor pressure VOC's than typically encountered in the Osage. The Osage has issues with methane emissions but, methane is not a VOC (regulatory definition).

2. This "tag or note" repair system is part of a LDAR program.

3. We agree that leaks should be repaired as soon as possible.

4. The SPCC regulations contain specific provisions requiring vacuum protection. There is the possibility for creating confusion here, keep tight but do not seal, keep tight but adequately vent, etc.

5. Valve location is not a significant issue in the Osage. This item pertains to multilevel process facilities.

6. It would be imprudent to attempt to flare the VOC fugitive emissions that exist in the Osage.

7. A useful tool, "should" is not appropriate.

8. You could/should state that water contaminated with produced water exceeding 1000 ppm TDS should never be used for dust control (a violation of the CWA).

9. Reduction of methane emissions requires gas gathering investment. Gas gathering infrastructure could have a dramatic impact on reducing methane emissions in Osage County and have a greater greenhouse benefit than wind farms.

10. Very few Osage tank batteries have pneumatic controls. Another, example that undermines the creditability of the manual.

    This list should be omitted from the Manual.

Page 42, Air Pollution Prevention:

"What best management practices should I deploy in flaring to minimize air pollution?" This document should not be a source of information on flare performance and safety. The advice offered is inappropriate.

Page 43, Air Pollution Prevention:

"What best management practices should I use to reduce or prevent emissions from tanks and ponds?" Open top tanks and ponds should not contain oil, VOCs, or H_2S, agreed.

The subject of pressure relief devices especially their maintenance requires a level of expertise not represented in this Manual development process.

Submerged fill for storage tanks greater than 500 gallons (12 bbls.) is a subject that needs careful consideration if applied to Osage gun barrels and crude oil tanks (all exceed 12 bbls.). There can be unintended consequences such as increased spills due to siphoning.

Vapor balancing of crude loading would require considerable investment on the part of operators and crude purchasers. Crude is transferred infrequently (usually less than once a month). Enforcement of such a requirement would put many batteries out of business and cause the crude purchasers to reduce their prices to offset their investment. The result will be a loss of income to the Osage mineral interest owners. Participation of crude purchasers is required to vet such a "best practice".

Presumably, the Osage Minerals Council has excellent contacts with crude purchasers that would have useful comments on this subject.

Page 44, Air Pollution Prevention:

"What is hydrogen sulfide and when is it immediately dangerous?" We believe the statement, "EPA does not have a specific numerical criteria for its control", is in reference to ambient air quality standards. Ambient air quality standards are not comparable with industrial exposure standards (IDLH).

A relevant ambient air concentration limit is the Oklahoma standard for ground level concentrations outside the source's property. These H_2S standards, in one form or another, have been existence for over 40 years. The Oklahoma standard is 0.2 ppm, 24-hour average (OAC 252:100-31-7 (b)). See https://www.osha.gov/SLTC/hydrogensulfide/hazards.html for odor thresholds, symptoms, and effects.

Appendix A (labeled Appendix E):

The SPCC Plan for the fictitious Clearwater Oil Company is well known to engineers involved in the preparation and certification of SPCC Plans. Appropriately it generally meets or exceeds the EPA's requirements with the exception of its failure to include a Part 109 Contingency Plan.

The following comments illustrate the differences between the fictitious Clearwater Oil Company's plan and a corresponding plan for a typical, yet fictitious, Osage company, Loco Oil Company.

Clearwater has a contract with a services firm that provide operations support (Avonlea Services).

Loco has a single pumper who visits all wells and the tank battery every day.

Clearwater has three 400 bbl. crude oil tanks, one 500 bbl. produced water tank, and one 500 bbl. gun barrel.

Loco has two 90 bbl. crude oil tanks, one 200 bbl. produced water tank, and one 52 bbl. gun barrel.

Clearwater sells one 180 bbl. load weekly.

Loco sells one 80 bbl. load every six weeks.

Clearwater maintains an inventory of spill response equipment in a shed near the loading area.

Loco's pumper has a bag of absorbent material in his truck.

Clearwater's loading area is equipped with a catchment structure outside the secondary containment structure which will contain the first 40 barrels of oil if spilled by the purchaser.

Local's loading valves are just inside the secondary containment and there is no other containment structure should the purchaser have a spill. Loco considers the purchaser to be responsible for any loading spills.

Clearwater's facility is designed such that drainage flows to ditches which can examined daily for evidence of a spill.

Loco's facility is located in the middle of 300 acres of tall grass pasture on ¼ acre (50X50 for each tank). Spills outside the containment structure go directly to the surrounding environment and are quite evident.

Clearwater included "Berm capacity calculations" in their spill plan which show that the containment area is flat and the berm height is 2.5 feet.

Loco's containment structure is located on a slope and Loco's engineer measured the floor of the containment structure (uneven) and the lowest point on the berm (uneven) to determine the containment capacity.

Clearwater determined that it was impracticable to provide secondary containment for their flowlines and as a consequence made a written commitment of manpower and equipment including contract agreements with cleanup service firms. Furthermore, Clearwater said they would provide an Oil Spill Contingency Plan following the provisions of 40 CFR 109. However, to date Clearwater has failed to come up with a Part 109 plan.

Loco also determined that it was impracticable to provide secondary containment for their flowlines and provided a list of local firms that will be of assistance in the event of a spill. Loco does not have written agreements with these local firms but based on personal relationships and reputations has more confidence than could be provided by written agreements. As a back-up, Loco obtained a letter from a Tulsa cleanup firm stating that they would respond if called out.

Clearwater has established written inspection procedures which include daily inspections and formal recorded inspections every month.

Loco's pumper performs visual inspections every day of all equipment. Loco's formal written inspections follow a procedure provided by their engineer and are done every quarter.

Clearwater has an API qualified inspector make measurements of their tanks every 15 years and attempts to predict tank bottom failure, presumably to repair or replace crude oil tanks before a leak occurs.

Loco's engineer has assured Loco that a tank bottom leak will develop very slowly, not be a safety hazard, and will be contained in the secondary structure. Loco's engineer also said that cleaning for tank entry and tank entry are not without safety and environmental risks. Loco relies on visual inspections to find tank leaks and replaces leaking tanks as soon as practicable.

Clearwater (presumably) has some steel flowlines and performs ultrasonic measurements every five years in an attempt to predict failure.

Loco has replaced all of their flowlines with Polyethylene pipe and does not perform ultrasonic inspections.

Clearwater has annual spill prevention briefings in conjunction with their safety meetings. Coffee and donuts are served, presentations made, and a sign in sheet filled out.

Loco does not have annual meetings per se. However, Loco's pumper lives in Pawhuska and keeps up with what is going on in the oil patch. Loco's owner meets every week with his pumper and at least once a year designates a meeting as the "official" spill prevention meeting, reviews spill related developments, and makes a record of the meeting in the spill plan.

Clearwater requires that all their contracts contain a certain 250 word paragraph pertaining to water quality and their SPCC Plan.

Loco operates without lawyers and contracts. However, Loco only does business with reliable knowledgeable people.

Clearwater has a truck loading procedure which tells the crude purchaser such things as "ground the truck", "use wheel cocks", "open and close the proper valves", etc.

Loco depends on its crude purchaser to know how to safely load his truck.

Clearwater failed to include their Part 109 Contingency Plan.

Loco's engineer developed a plan which he and Loco consider useful. The engineer stated we will not know if the Part 109 Contingency Plan is acceptable to the EPA unless we get inspected.

The Clearwater SPCC Plan is a distraction in the proposed Manual. Engineers who prepare SPCC Plans are well aware of it. We recommend that this link be provided rather than including all 43 pages of the Clearwater SPCC Plan, http://www.epa.gov/oem/docs/oil/spcc/guidance/E_ProductionPlan.pdf .

We would be most pleased to have any opportunity to discuss these comments and look forward to continued participation in the update process.
Sincerely,

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